ENTOMOLOGY.—*New Neotropical Hebridae, including a catalogue of the American species (Hemiptera).*[1]

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The present paper is based entirely upon specimens of the family Hebridae in the collections of the authors. It comprises the descriptions of four new species of the genus *Hebrus* Buchanan-White and one new *Merragata* Curtis, all inhabiting the Neotropical Region. The allotypes, both males, of two species of *Hebrus* recently described from the United States are also characterized. The catalogue enumerates a total of 40 species from North, South, and Insular Americas. Types of the new species are in the Drake Collection (U. S. N. M.).

In order to facilitate identification of species, the right parameres of 5 species of *Merragata* and of 14 species of *Hebrus* are illustrated. The male allotypes of *H. amnicus* Drake and Chapman (Fig. 1) and of *H. tuckahoanus* Drake and Chapman (Fig. 2) are also figured. Without illustrations, especially of male parameres, many hebrids are rather difficult to identify. The combinations of shape, sculpturing, and pilosity of the parameres provide reliable characters for the separation of the more troublesome species. Parameres of several hebrids not included in the discussions are also figured. We are indebted to Mrs. Richard Froeschner, Bozeman, Mont., for making Figs. 1 and 2 and to Mrs. Jerome Rozen, Alexandria, Va., for the rest of the illustrations.

Because most species of hebrids at present are known only in the macropterous state, we are listing below the different species (with distribution) represented by either apterous or brachypterous forms in our collections.

Apterous form: Hebrus tuckahoanus Drake and Chapman (Fig. 2) is known so far only in the totally apterous condition from the type, allotype, paratypes, and a few other specimens, all collected near Tuckahoe, N. J.

Brachypterous form: Hebrus amnicus Drake and Chapman (Fig. 1) is represented solely by short-winged specimens—holotype, allotype, and other specimens netted near Calhoun, Ga. The wing-pads are very long, with apices reaching beyond middle of abdomen. Alate form is unknown.

H. piercei Porter (Fig. 6*d*) is represented by a single brachypterous specimen from Arizona (Oak Creek Canyon). *H. consolidus* Uhler (Fig. 5*c*) is not infrequently taken in both long- and short-winged forms. We have many brachypterous specimens from Florida (Cocoa, Mims, Center Hill, Apopka, and Titusville). *H. burmeisteri* Lethierry et Severin (Fig. 5*b*) is probably more frequently encountered in pterygodimorphic condition than other members of the genus. Brachypterous specimens of the latter are at hand from Washington, D. C., Virginia (Fairfax County), Pennsylvania (Philadelphia), New York (Long Island), and New Jersey (Andover, Helmetta, Jamesburg, Tuckahoe, and New Brunswick).

Merragata hebroides Buchanan-White (Fig. 4*b*) occurs almost always in the long-winged state. However, we have brachypterous specimens from Ohio (Ira), Florida (Merritt Island), and Canada (Quebec). On the other hand, *M. brunnea* Drake (Fig. 4*c*) is commonly found in both short- and long-winged forms. Our collections contain brachypterous forms from Ohio (Hebron, Rockbridge, Prentiss, and Hocking County), Michigan (Ingham, Livingston, and Washington Counties), New Jersey (New Brunswick), and Florida (Center Hill, Orlando, Indian River City, Union Park, Holly Hill, Mims, Gainesville, and Titusville).

Distribution: Merragata and *Hebrus* are the only genera of hebrids represented in the New World, and all the 40 described species are indigenous; *M. hebroides* is by far the

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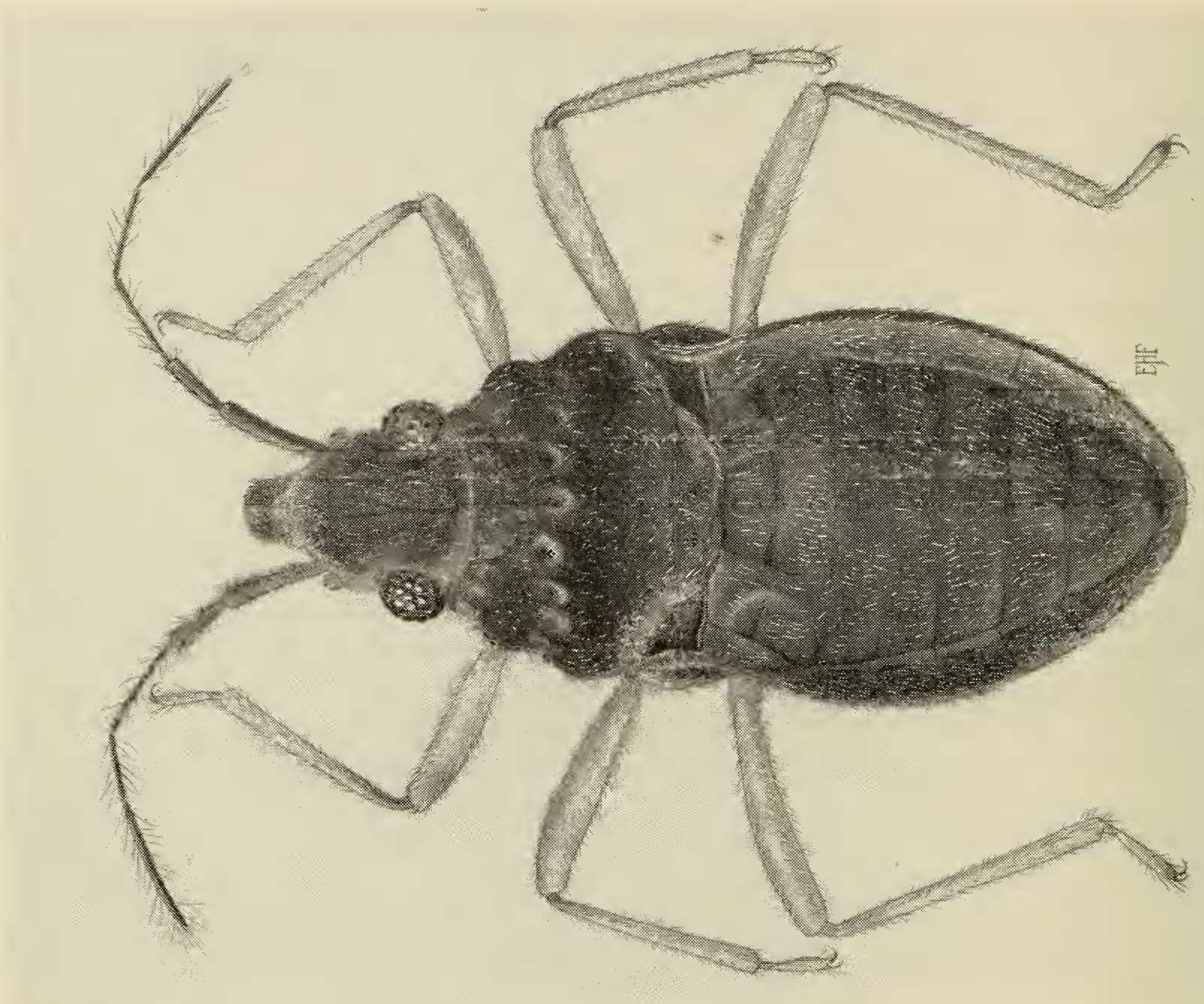

FIG. 2.—*Hebrus tuckahoanus* D. & C., male allotype.

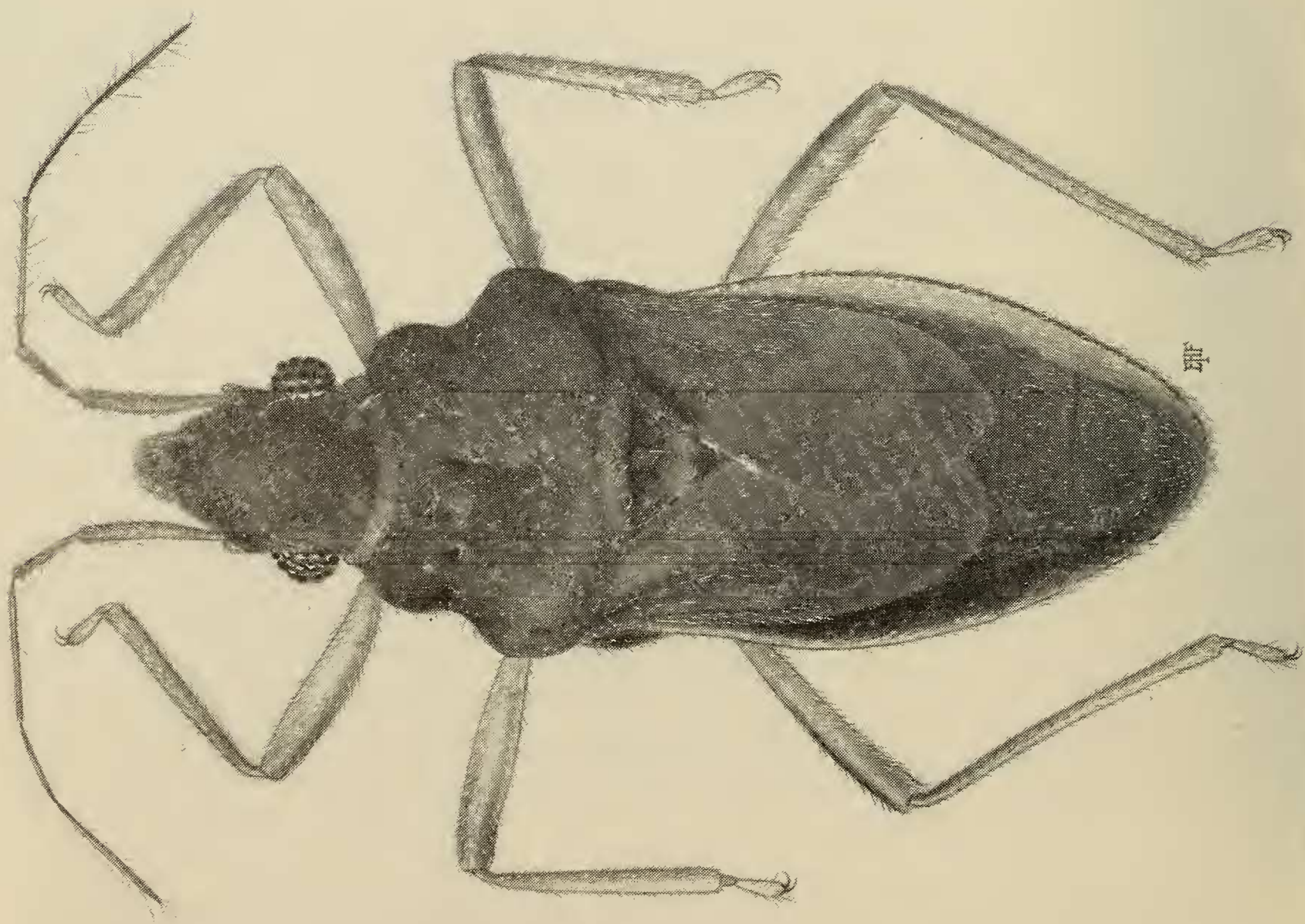

FIG. 1.—*Hebrus amnicus* D. & C., male allotype.

most generally and widely dispersed species. Although originally described from the Hawaiian Islands (probably introduced there from the Americas) it is an inhabitant of all the Americas, save perhaps Chile. *M. lindbergi* Poisson described from Canary Islands has recently been suppressed as a synonym of *hebroides*.

As depicted in Table 1, the hebrid fauna is richest in species in the Neotropical Region, especially in the tropics. The Nearctic region is inhabited by 15 species and the Neotropical by 31. Six species are shared by both regions.

TABLE 1.—DISTRIBUTION OF AMERICAN HEBRIDAE

Genus	Number of species	Faunal regions		Number of species inhabiting both regions
		Nearctic	Neotropical	
Merragata.....	9	3	8	2
Hebrus.....	31	12	23	4
Total.....	40	15	31	6

Merragata lacunifera (Berg) (Fig. 3)

Lipogomphus lacuniferus Berg 1879: 287.
Merragata lacunifera Champion 1898: 198.

Known only in macropterous form. Widely distributed in Argentina, Brasil, Bolivia, Uruguay, and Paraguay. Often found in numbers at the water's edge of ponds, slow-moving parts of sluggish streams, and quiet, secluded coves of lakes. The male can be separated at once from other members of *Merragata* by the subapical spine (Fig. 3*b*) on the hind face of the posterior tibia. The male paramere (Fig. 3*a*) is also distinctive.

Merragata accola, n. sp.

Macropterous form: Small, brownish testaceous, with posterior part of pronotum and exterior margins of scutellum tending to be blackish; hemelytra fuscous black with space between closed cell and a short basal stripe within next to inner vein brownish or testaceous; veins blackish tending to become brownish basally; body beneath dark reddish fuscous with sterna and pleura brownish testaceous. Appendages testaceous. Length 1.80 mm; width (across humeri) 0.72 mm.

Head 0.40 mm wide across eyes, with median longitudinal furrow. Antennae testaceous, moderately slender, with last two segments fairly slender, sparsely and rather shortly hairy, measurements: I, 10; II, 8; III, 17; IV, 20. Labium long, extending to abdomen. Legs testaceous, moderately stout. Pronotum very coarsely punctate, width across humeri much greater than median length (58: 32), with front lobe shorter (14: 18) and narrower than hind lobe (42: 58) with lateral sides of both lobes convex; front lobe with collar set off by an encircling row of pits, also with a transverse row of larger pits between lobes; hind lobe with several large pits, broadly, subfurcately impressed on median line, with a double row of pits at bottom of furrow, the humeral angles within marked off by a longitudinal impression. Scutellum twice as wide at base as median length (30: 16) with exterior margins raised, with low median carina, with apex broadly truncate and not bifid.

Holotype (male), Los Amates, Guatemala, collected by Dr. Kellerman. Female unknown.

Narrower and paler than *M. brevis* Champion with apex of scutellum truncate and not incised, pronotum with double row of punctures in shallow median longitudinal furrow, antennae distinctly shorter. Separated from *M. truxali* Porter by shallower median furrow of pronotum, truncate apex of abdomen and antennal measurements.

Hebrus amnicus Drake & Chapman (Fig. 5*f*)

Hebrus amnicus Drake and Chapman, 1953: 10.

This species was originally described from a single brachypterous female, found hibernating under a stone, Calhoun (Gordon County), Ga., 4.ii.1953. Recently the junior author collected four males and seven females, all brachypterous, from the same, tiny, spring-fed stream (type spot) by washing them off of the wet, grassy bank adjacent to the edge of the water into the stream. Efforts to collect this hebrid on the surface of the water before pouring water up on the bank were entirely fruitless.

Brachypterous male (Fig. 2): Slightly smaller than female but with same form, color, markings, and general aspect. Wing-pads long, reaching beyond middle of abdomen, blackish fuscous, with a very small, basal, pale spot on each side adjacent to the scutellum. Antennal measurements as in female. Allotype (Fig. 2) and a paramere (Fig. 5*f*) of another male specimen are figured. Macropterous form unknown. Length 2.10 mm; width (humeral angles) 0.70 mm.

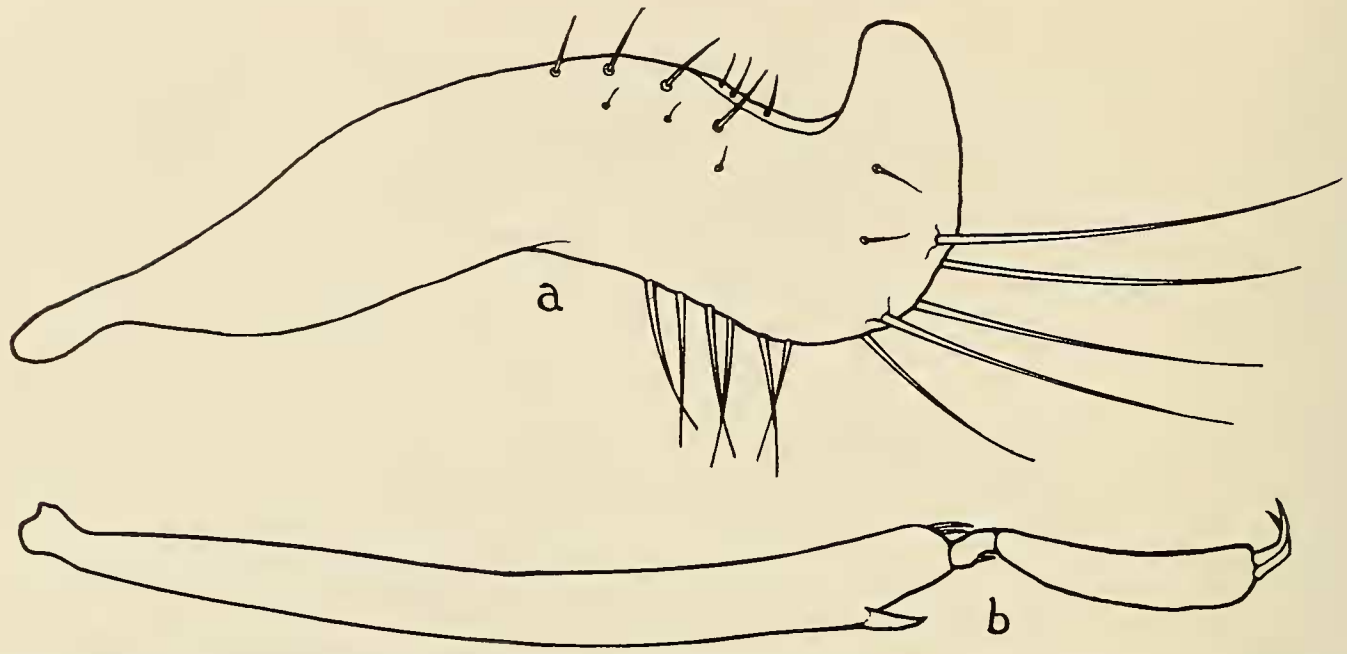

FIG. 3.—*Merragata lacunifera* (Berg) (male): *a*, Right paramere; *b*, hind tibia showing subapical spine

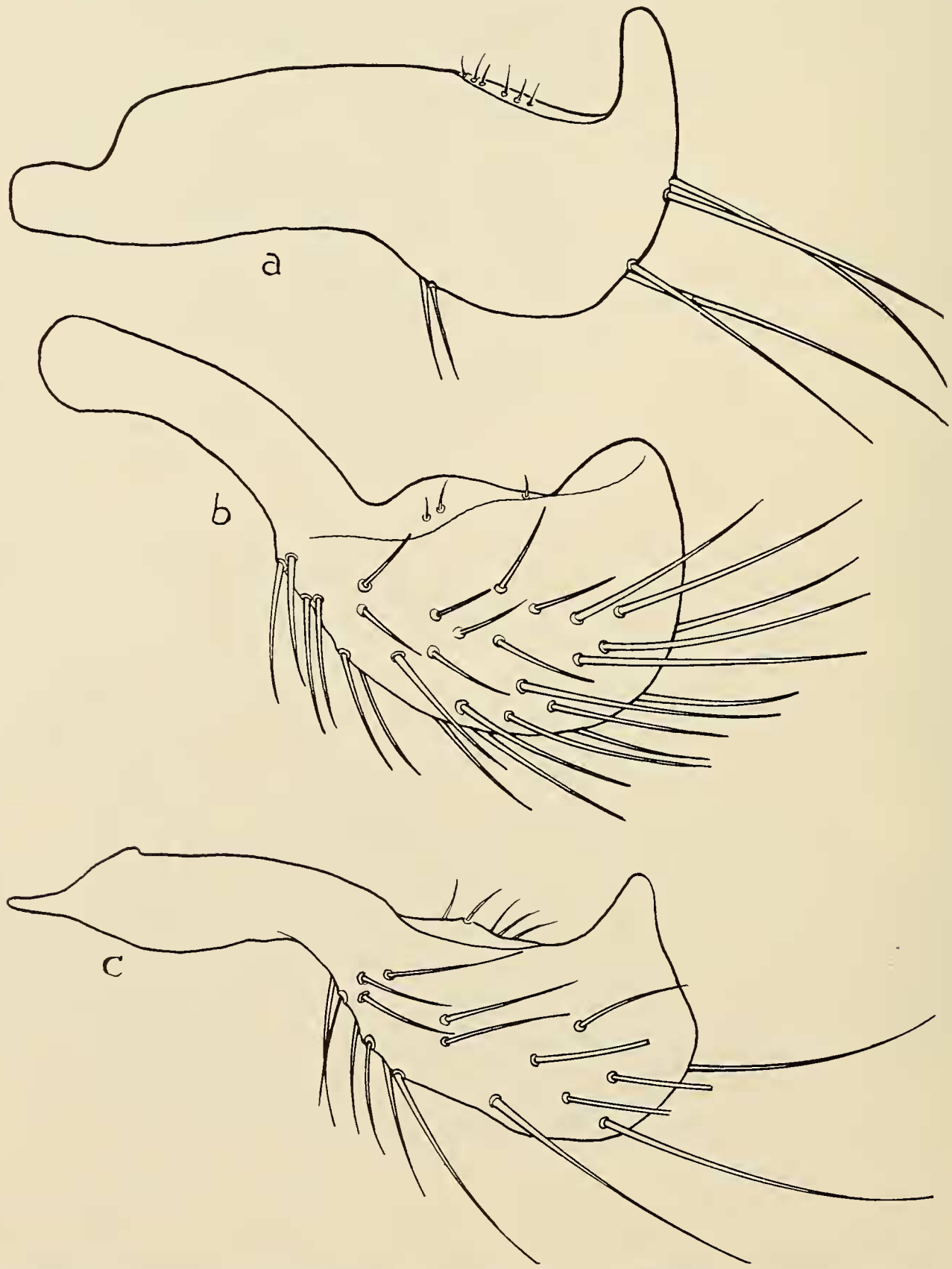

FIG. 4.—*Merragata*, right male parameres: *a*, *brevis* Champ. (paratype); *b*, *hebroides* B.-W.; *c*, *brunnea* Drake.

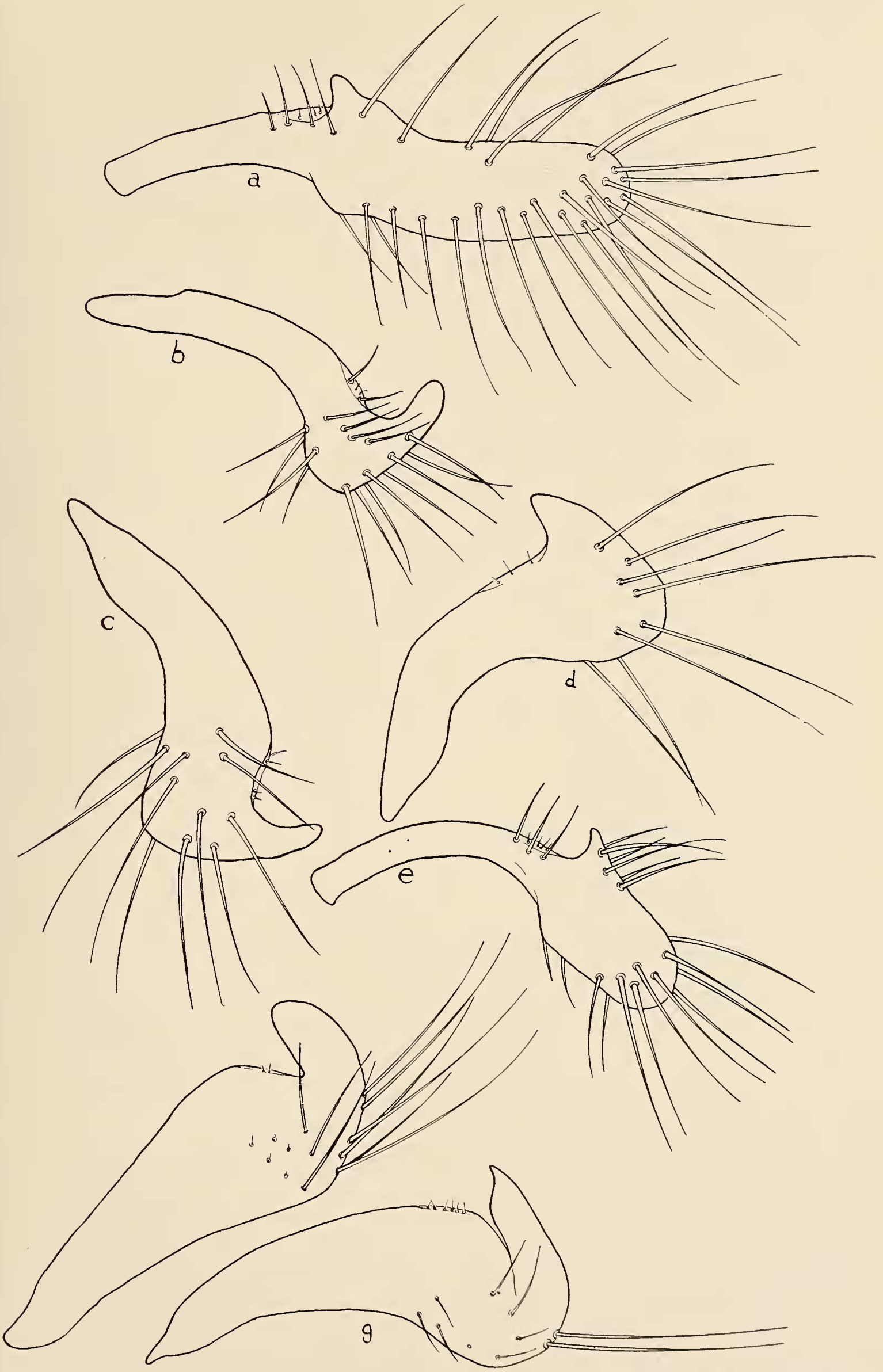

Fig. 5.—*Hebrus*, right male parameres: *a*, *comatus* D. & H.; *b*, *burmeisteri* L. & S.; *c*, *consolidus* Uhler; *d*, *tuckahoanus* D. & C.; *e*, *buenoi* D. & H.; *f*, *amnicus* D. & C.; *g*, *limnaeaus* D. & C.

Hebrus tuckahoanus Drake and Chapman
(Figs. 2, 5*d*)

Hebrus tuckahoanus Drake and Chapman, 1954: 152.

Originally characterized from two females, collected by submerging vegetation growing in a small drainage ditch in a fresh water impoundment and then dipping the specimens from the water surface, 2.vi.1953, Tuckahoe, N. J. Since the species was originally described, eighteen additional specimens comprising both sexes, have been taken in another fresh water impoundment near Tuckahoe, N. J., 20.ix.1954 and 11.v.1958. The latter specimens were obtained by splashing water against the low, wet, grassy sides of the ditch in order to wash the hebrids into the water.

Apterous male: Slightly smaller than female, with same form, color, markings, and general appearance. Wing-pads also absent. Allotype and paramere of another male (Fig. 5*d*) are figured. Macropterous form unknown. Length 1.70 mm; width 0.70 mm.

Hebrus major Champion (Fig. 6*b*)

Hebrus major Champion, 1898: 118, fig.
Hebrus acapulcana Drake and Chapman, 1954: 152.

As a study of more specimens of *major* and of *acapulcana* from Mexico shows that these two names apply to the same species, the latter is here placed in synonymy. (New synonymy.)

Hebrus engaeus, n. sp.

Large, blackish fuscous with hemelytra lighter in color, more brownish fuscous and marked on each side with a small, basal, whitish spot adjacent to scutellum; head, pronotum and body beneath with some grayish blue pruinose, especially next to eyes; head and pronotum above sparsely furnished with very short golden pubescence, the basal part of hemelytra more abundantly provided with slightly longer, golden pubescence; sterna and median part of venter clothed with short, yellowish brown hairs. Length 3.00 mm; width (across humeri) 1.05 mm.

Head moderately declivent, with median longitudinal furrow. Labium long, pale fuscous, extending to venter. Antennae long, brown, clothed with short, pale hairs, last three segments quite slender, measurements: I, 28; II, 25; III, 29; IV, 22; V, 20. Legs unarmed, brownish fuscous with tibiae and tarsi blackish, clothed with short, pale, pubescent hairs.

Pronotum with front lobe strongly concavely constricted laterally, much wider across humeral angles than at widest point of anterior lobe (55: 88); anterior lobe depressed, coarsely pitted, with two rows of pits forming a shallow, median, longitudinal furrow and also a pair of furrows, one on each side of the median furrow; collar short, set off by an encircling row of small pits; posterior lobe transversely convex, with pits largely inconspicuous, the humeral angles slightly elevated. Scutellum deeply impressed, with lateral and hind margins carinate, with prominent median carina, wider at base than median length, rather sharply obliquely narrowed on lateral sides to apical two-fifths, thence with lateral sides slowly rounded, the apex bluntly rounded and without notch. Hemelytra as long as the abdomen, not completely covering connexiva; veins raised, wide, the inner vein slowly convexly rounded on inner and apical margins. Female feebly larger than but very similar in general aspect to male.

Holotype (male) and *allotype* (female), Tucuman, R. A., Argentina, 2,000 meters, 8.x.1948, P. Wygodzinsky.

This species is a little larger than most of the South American members of the genus. The structure of the pronotum, shape of scutellum, and especially the long male parameres are distinctive characters.

Hebrus lacunatus, n. sp. (Fig. 6*h*)

Small, dark brown tinged with fuscous, median longitudinal part of head, scutellum and hemelytra largely dark fuscous. Body beneath dark fuscous with venter black-fuscous and shiny. Dorsal surface of head, pronotum and hemelytral veins sparsely furnished with tiny, scalelike, golden pubescence. Legs yellowish testaceous with upper face of femora largely dusky, clothed short pubescence. Length 2.00 mm; width (across humeri) 0.85 mm.

Head with distinct, median, longitudinal groove. Labium extending between hind coxae, flavous; bucculae flavous, sides of sulcus dark brown to dark fuscous. Antennae brownish testaceous, clothed with yellowish pubescence, the hairs a little longer on last three segments, measurements: I, 13; II, 10; III, 17; IV, 12; V, 15.

Pronotum much wider across humeral angles than median length (64: 35), with pits largely inconspicuous except on hind part of front lobe, with a moderately wide, deep, longitudinal furrow extending posteriorly from just behind collar to base of hind lobe, with a deep pit in

FIG. 6.—*Hebrus* and *Merragata*, right male parameres: *a*, *H. nubilis* D. & H.; *b*, *H. major* Champ.; *c*, *H. sobrinus* Uhl.; *d*, *H. piercei* Porter; *e*, *H. concinnus* Uhl.; *f*, *H. catus* D. & C.; (holotype); *g*, *M. leucosticta* Champ.; *h*, *H. lacunatus* D. & C. (holotype.)

bottom of furrow between lobes; front lobe depressed, with lateral sides forming a convex line, much shorter and narrower than hind lobe; humeri within set off by a longitudinal furrow. Scutellum with median carina, rimmed on lateral and hind margins, bifed at apex. Hemelytra dark brown with a small, sharply defined small basal white spot on each side of scutellum; veins dark brown, with apical vein closing cell blackish and sharply obliquely truncate. Legs moderately stout. Brachypterous form unknown.

Holotype (macropterous male) taken in a small, deep, stagnant pool near a river, Ciudad Valles, Mexico, 8.viii.1950, C. J. Drake. *Paratype* (male), Tampico, Mexico, 16.vii.1950, taken in a small drainage ditch.

This species can be distinguished from *H. sobrinus* Uhler by its smaller form, and the clearly defined, small, basal, white spot on each side of the scutellum. The parameres are also different (Fig. 6*c*, *h*). This species also resembles *H. limnaeus*, n. sp. from southern Brasil, but is smaller and also has differently shaped parameres.

Hebrus catus, n. sp. (Fig. 6*f*)

Small yellowish brown with humeral angles and hemelytral veins brownish fuscous; membrane infuscate with three, small, fairly distinct, whitish spots; base of elytra between veins and next to scutellum pale; body beneath yellowish testaceous; dorsal surface sparsely provided with tiny, scale-like, golden pubescence. Length 1.80 mm; width 0.70 mm.

Head with prominent, median, longitudinal furrow; eyes coarsely granulate, dark fuscous; labium yellowish testaceous, extending between hind coxae. Antennae brownish testaceous, with first segment longer than second, other segments missing. Pronotum with punctures between lobes moderately large and distinct, with a wide, rather shallow, median, longitudinal furrow; front lobe depressed, much narrower than hind lobe (42: 58), with the short collar set off by an encircling row of small pits, with lateral sides forming a convex line; hind lobe with punctures largely concealed, transversely convex, with humeral angles set off within by a shallow, longitudinal furrow. Scutellum slightly wider at base than median length, with distinct median carina, with exterior margins rimmed, the apical part rounded and notched at middle. Inner vein of elytra with interior margin slowly rounded, obliquely truncate at apex. Legs yellowish brown.

Holotype (male), Canal Zone, Panama, 10.2.39, C. J. Drake.

The structures of pronotum and scutellum as described above and the male paramere (Fig. 6*f*) distinguish this species from other Neotropical members of the genus.

Hebrus limnaeus, n. sp. (Fig. 5*g*)

Small, rufous-brown with median longitudinal part of head, posterior part of front lobe of pronotum fuscous; hemelytra with a small basal white spot on each side of scutellum, with veins blackish fuscous; hemelytral membrane dark fuscous, without spots; head beneath, bucculae and labium flavo-testaceous, the labium extending between hind coxae. Legs flavus with dorsal surfaces of femora and tibiae mostly dark brown or dark fuscous, the pubescence short and pale. Antennae brownish, pubescent, with last three segments missing. Length 2.25 mm; width 0.85 mm.

Pronotum with moderately large pits, those between lobes larger than the others, with median longitudinal furrow, wider across humeri than median length (68: 40). The front lobe much narrower than hind lobe (48: 68). Front lobe depressed, with lateral sides forming a convex line, with a large pit in deepest part of median sulcus (almost between the two lobes); collar very short, set off by an encircling row of small pits; hind lobe transversely convex, with a row of pits bordering hind margin, the humeri moderately prominent. Scutellum incised at apex. Hemelytra clothed with short yellowish brown hairs on coriaceous part, with veins prominent, nearly straight, with margin behind closed cell obliquely truncate. Abdomen beneath blackish fuscous, with matted, grayish pubescence. Male parameres as in Fig. 1.

Holotype (male), Santa Catarina, Nova Teutonia, Brasil, 26.v.1941, Fritz Plaumann.

The small white spot at base of each hemelytron and the male parameres separate it from other Brasilian species.

Family Hebridae Fieber, 1851

Hebrides Amyot et Serville, 1843

Naeogeidae Kirkaldy, 1902

Type genus, *Hebrus* Curtis, 1833.

Genus **Merragata** Buchanan-White, 1877

Lipogomphus Berg, 1879: 286

Type species, *Merragata hebroides* Buchanan-White, 1877.

1. **accola** Drake and Chapman, n. sp. Guat.
2. **brevis** Champion, 1898: 122. Mex., Guat., Pan., U.S. (Fla., Texas, Calif.)
3. **brunnea** Drake, 1917: 105. U.S. (east of Rocky Mts.), Canada (southern)
4. **hebroides** Buchanan-White, 1877: 114. Americas from southern Canada into Argentina (not reported from Chile); Hawaiian Islands; Africa (Cape Verde Islands)
   foveata Drake, 1917: 103.
   slossoni Van Duzee, 1921: 133.
   lindbergi Poisson, 1954: 2.
5. **leucosticta** Champion, 1898: 122. Guat., Nic., Pan.
6. **lacuniferus** (Berg), 1897: 287. Arg., Bras., Bol., Para., Urug.
7. **quieta** Drake, 1952: 194. Colom., Mex., Pan.
8. **sessoris** Drake and Harris, 1943: 44. Bras.
9. **truxali** Porter, 1955: 27. Mex.

Genus **Hebrus** Curtis, 1879

Naeogeus Laporte de Castelnau, 1832

Type species, *Hebrus pusillus* (Fallen) (as *Lygaeus*).

10. **amnicus** Drake and Chapman, 1953: 10. U.S. (Ga.)
11. **beameri** Porter, 1952: 9. U.S. (Kans.)
12. **bilineatus** Champion, 1898: 119. Mex.
13. **buenoi** Drake and Harris, 1943: 52. U.S. (N.Y., N.J., Mass., Va., Pa., Wash. D.C., Miss., Fla., Ohio, Mich., Wis., Ill., Iowa, Kans., Colo.)
14. **burmeisteri** Lethierry et Severin, 1896: 51. Mex., U.S. (N.Y., N.J., Pa., Va., Md., Mass., D.C., S.C., Ga., Fla., Ky., Mich., Wis., Iowa, Mo., Kan., Ill.)
   pusillus Burmeister, 1835: 214 (in part, nec Fallen).
15. **camposi** Drake and Chapman, 1954: 151. Ecua.
16. **catus** Drake and Chapman, n. sp. Pan.
17. **comatus** Drake and Harris, 1943: 53. U.S. (N. Mex., Tex.)
18. **concinnus** Uhler, 1894: 221. W.I. (Grenada), Peru, Pan., Costa Rica, Mex., U.S. (Mass., N.Y., N.J., Pa., Md., N. Car., S. Car., Fla., Ill., Col., Ariz., N. Mex., Calif., Okla., Wash.)
19. **consolidus** Uhler, 1894: 222. W.I. (Grenada, Trinidad, Kingston, Jamaica), Pan., Guat., Mex., U.S. (La., Miss., Fla.)
20. **ecuadoris** Drake and Harris, 1943: 55. Ecua.
21. **engaeus** Drake and Chapman, n. sp. Arg.
22. **gloriosus** Drake and Harris, 1943: 47. Bras.
23. **hirsutus** Champion, 1898: 119. Mex.
24. **hubbardi** Porter, 1952: 10. U.S. (Calif.)
25. **hungerfordi** Drake and Harris, 1943: 58. Ecua.
26. **lacunatus** Drake and Chapman, n. sp. Mex.
27. **laeviventris** Champion, 1898: 120. Pan.
28. **limnaeus** Drake and Chapman, n. sp. Bras.
29. **major** Champion, 1898: 118. Mex., U.S. (Ariz., Calif.)
   acapulcana Drake and Chapman, 1954: 56.
30. **nubilis** Drake and Harris, 1943: 56. Mex.
31. **parvulus** Stål, 1858: 60. Bras.
32. **paulus** Drake and Harris, 1943: 47. Bras.
33. **piercei** Porter, 1942: 147. U.S. (Ariz., N. Mex., Tex.)
34. **plaumanni** Porter, 1952: 12. Bras.
35. **priscus** Drake and Harris, 1943: 57. Bras., Peru, Pan., Para.
36. **pudoris** Drake and Harris, 1943: 56. Mex., Costa Rica
37. **sobrinus** Uhler, 1877: 452. U.S. (Ga., Va., Tex., Calif., Vt., Ariz., N. Mex.)
38. **sulcatus** Champion, 1898: 120. Pan.
39. **tuckahoanus** Drake and Chapman, 1954: 152. U.S. (N.J.)
40. **usingeri** Drake and Harris, 1943: 54. Mex.

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ELECTIONS TO THE WASHINGTON ACADEMY OF SCIENCES (1955, 1956)

(Resident members unless otherwise indicated)

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Maxwell Kenneth Carron, in recognition of his contributions to geochemistry and analytical chemistry.

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Richard Herbert Foote, in recognition of his contribution to the taxonomy of Diptera, particularly of the blood-sucking species.

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February 15, 1955

Charles A. Douglas, in recognition of his contributions in the field of atmospheric transmissometry.

Samuel Newton Foner, in recognition of his contributions in mass spectrometry and in particular his study of free radicals using mass spectrometric techniques.

Robert Boyd Hobbs, in recognition of his contributions to leather and paper research and technology, and in particular his researches on instrumentation and techniques for evaluating the properties of these materials and products made from them.

Joe Thomas Massey, in recognition of his contributions to microwave spectroscopy, particularly to the study of the internal rotation of the hydrogen peroxide molecule.

Robert Joshua Rubin, in recognition of his research work in chemical physics and in particular his contributions to an understanding of the exuded volume problems.

Kurt Egon Shuler, in recognition of his contribution to chemical physics and in particular his studies of reaction kinetics in flames.

Siegfried Fred Singer, in recognition of his researches on cosmic-ray physics, the physics of the upper atmosphere, and his contributions to a better understanding of the age of meteorites.

Zaka I. Slawsky, in recognition of his researches on hyperballistics and his contributions to a better understanding of the effect of molecular forces in very dense gases.

Harrell LeRoy Strimple, in recognition of his contributions to paleontology, and in particular his researches on Paleozoic Echinodermata. (Nonresident.)